IN THE CLAIMS:

1. (Currently Amended) A method of fabricating a membrane electrode assembly for use in a fuel cell, ~~including the steps of~~comprising:

(A) providing a mold that includes a first and second mold plate adapted to impart a desired shape to induce compression to decrease the thickness of components in the mold and to apply pressure substantially evenly across an entire active area of a membrane electrode assembly being fabricated in the mold;

(B) providing a lead frame, including at least a first lead frame component that is adapted to be received into said mold, wherein the lead frame includes a current collector with a raised surface where the raised surface provides a minimum limit to the thickness of components in the mold;

(C) assembling a protonically conductive membrane with catalyst coatings on each of its major surfaces onto said first lead frame component;

(D) placing said lead frame containing said membrane into the mold;

(E) compressing said second mold plate onto said first mold plate;

(F) introducing a moldable material in communication with said mold plates; and

(G) allowing the moldable material to cure in said mold to solidify and form a frame around said membrane to produce a membrane electrode assembly for use in a fuel cell.

2. (Currently Amended) The method as defined in claim 1 ~~including the further step of~~further comprising integrating ~~a~~ the current collector into said first lead frame component onto which said membrane is placed.

3. (Currently Amended) The method as defined in claim 2 ~~including the further steps of~~further comprising:

(A) providing a second lead frame component that includes a second current collector; and

(B) sandwiching said catalyzed membrane between the first and second current collectors;

(C) introducing the lead frame components into said mold;

(D) compressing the first and second mold plates together;

(E) introducing a moldable material into said mold;

(F) allowing the moldable material to cure to form the shape of the mold plates thereby forming a sealed fuel cell.

4. (Original) The method as defined in claim 1 wherein the step of introducing the moldable material includes injection molding a moldable material into said mold.

5. (Cancelled)

6. (Currently Amended) A method of fabricating a fuel cell array, ~~including the steps of~~comprising:

(A) providing a mold that includes a first and second mold plate of a desired shape that forms a cavity to induce compression to decrease the thickness of components in the mold and to apply pressure substantially evenly across an entire active area of a membrane electrode assembly being fabricated in the mold;

(B) providing a sheet of protonically conductive membrane material that has been coated on each of its major surfaces with a catalyst material to form a sheet of catalyzed membrane;

(C) providing a lead frame structure that includes a plurality of individual lead frame components that define separate fuel cells, wherein each lead frame

includes a current collector with a raised surface, where the raised surface provides a minimum limit to the thickness of components in the mold;

(D) assembling said sheet of catalyzed membrane into said lead frame structure;

(E) placing said lead frame structure containing said membrane sheet into the mold;

(F) compressing said second mold plate onto said first mold plate;

(G) introducing a moldable material in communication with said mold plates; and

(H) allowing the plastic to cure in said mold to solidify and form a frame around said individual fuel cells to produce a fuel cell array.

7. (Currently Amended) A method of establishing a seal around a fuel cell, comprising ~~the steps of~~:

(A) providing a lead frame assembly including:

(i) providing first and second current collectors adapted to serve as lead frame components in an associated mold device, wherein the first and second current collectors each have a raised surface;

(ii) assembling fuel cell components including:

(a) a catalyzed protonically conductive, electronically non-conductive membrane; and

(b) first and second diffusion layers disposed on opposite sides of said membrane;

(iii) arranging said fuel cell components between said first and second current collectors;

(B) inserting the resulting lead frame assembly into a molding device;

(C) introducing a moldable material into said molding device having a mold cavity designed such so as to decrease the thickness of components in the mold to a minimum limit for the thickness of components in the mold which is set by the raised surface on the first and second current collectors

and to apply pressure substantially evenly across an entire active area of the membrane being fabricated in the mold; and

(D) allowing said moldable material to cure to seal the edges of the lead frame assembly against leaks to thereby seal the fuel cell.

8. (Currently Amended) The method as defined in claim 7 further comprising ~~the further step of~~ spot welding the first and second current collectors that serve as lead frame components together to maintain the components in place.

9. (Currently Amended) The method as defined in claim 7 ~~including the~~ further comprising~~step of~~ trimming excess lead frame component portions away from said fuel cell to result in a finished fuel cell.

10. (Currently Amended) The method as defined in claim 7 ~~including the~~ further comprising ~~step of~~ providing said mold device with a mold cavity which, when said moldable material is introduced into said mold cavity and cured, creates a frame around said fuel cell.

11. (Currently Amended) A method of establishing a sealed diffusion layer for use in a fuel cell, comprising ~~including the steps of~~:

(A) providing a first current collector integrated into a lead frame component, wherein the first current collector includes a raised surface;

(B) applying a diffusion layer material to said first current collector on said lead frame component;

(C) providing a second current collector integrated into a lead frame component;

(D) applying a second diffusion layer material to said second current collector on said lead frame component;

(E) placing a catalyzed protonically conductive, electronically non-conductive membrane between said first lead frame component and said second lead frame component to form an assembly;

(F) placing said assembly into a molding device;

(G) closing mold plates associated with said molding device and hot pressing the assembly for a predetermined time period to decrease the thickness of components in the mold to a minimum limit for the thickness of components in the mold which is set by the raised surface on the first current collector and to apply pressure substantially evenly across an entire active area of a membrane electrode assembly being fabricated in the mold;

(H) introducing a moldable material into said mold cavity of said mold device; and

(I) allowing said moldable material to cure to seal said lead frame components integrating said first and second current collectors together to form a fuel cell.

12. (Original) The method as defined in claim 11 wherein step (H) includes an insert molding technique.

13. (Currently Amended) The method as defined in claim 11 ~~including the further step of~~ further comprising spot welding said first and second lead frame components together to maintain said components in position prior to placing the assembly into the molding device.

14. (Currently Amended) A method of introducing compression into a fuel cell, comprising ~~the steps of~~:

(A) providing a catalyst coated membrane;

(B) providing a first current collector integrated into a first lead frame component suitable for being received into a molding device, wherein the first

current collector includes a raised surface where the raised surface provides a minimum limit to the thickness of components in the mold;

(C) providing a second current collector integrated into a second lead frame component suitable for being received into a molding device;

(D) assembling said first and second current collectors on either side of said membrane to result in an assembly;

(E) placing said assembly into said mold device that has been provided with mold plates that form a cavity that induces compression to decrease the thickness of components in the mold and to apply pressure substantially evenly across an entire active area of a membrane electrode assembly being fabricated in the mold;

(F) closing said mold plates and maintaining said mold plates in a closed position to induce further compression; and

(G) introducing a moldable material into the resulting mold cavity thereby creating a frame around the fuel cell that maintains compression within said fuel cell without the need for mechanical fasteners.

15.–20.(Cancelled)

21. (New) The method of claim 1, wherein the raised surface prevents flashing between the mold plate and the current collector.